CLAIMS

| 1 | 1. | A method | of restoring | backed up | data, | comprising: |
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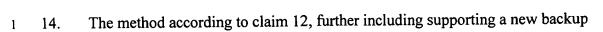
- retrieving a list of objects that are restorable by a client;
- displaying the list of restorable objects for browsing by a user;
- submitting a list of restorable objects marked for restoration by the client;
- 5 executing a restoration of the submitted restorable objects via a remote procedure
- 6 call such that multiple restore submissions can be made prior to restore execution.
- 1 2. The method according to claim 1, further including executing multiple restore
- 2 submissions concurrently.
- 1 3. The method according to claim 1, further including initiating a restore session for
- 2 the client.
- 1 4. The method according to claim 3, further including creating a restore engine
- 2 process for the retrieving, browsing, submitting and executing of restore objects.
- 1 5. The method according to claim 4, wherein the client communicates with the
- 2 restore engine process via remote procedure calls.
- 1 6. The method according to claim 4, wherein the restore engine process is created by
- 2 a dispatch daemon on a backup storage system server.
- 1 7. The method according to claim 4, wherein the restore engine process is terminated
- 2 upon completion of the restore execution.
- 1 8. The method according to claim 4, wherein the restore engine process runs on a
- 2 backup data storage server and further including creating a work item restore process on

- 3 the backup data server, a server restore process for generating a stream of data to be
- 4 restored, and a client restore process for receiving the data stream.
- 1 9. The method according to claim 4, further including detecting and identifying
- 2 libraries that support associated catalogs of backed up data for processing of backed up
- data by the restore engine process.
- 1 10. The method according to claim 9, further including adding a new library
- 2 supporting new methods of backing up data.
- 1 11. The method according to claim 9, further including determining object types for
- 2 backed up data supported by the libraries.
- 1 12. A method of restoring backed up data, comprising:
- 2 initiating a restore session for a first client via a dispatch daemon running on a
- data storage server through a graphical user interface associated with the client;
- 4 creating a restore engine process in response to a request by the dispatch daemon;
- establishing a connection between the graphical user interface and the restore
- 6 engine process;

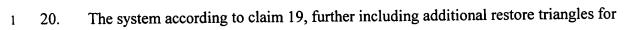
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- displaying a list of restorable objects for browsing by a user associated with the
- 8 client via the graphical user interface under the control of the restore engine process;
 - determining restorable objects marked for restoration by the user under control of the restore engine process;
- storing a list of marked restorable objects submitted by the client to the restore
- engine process; and executing the restoration of the marked objects under control of the restore engine
- process independently of the browsing, marking and submitting of the restorable objects.
- 1 13. The method according to claim 12, wherein the client communicates with the
- 2 restore engine process via remote procedure calls.



- data method by adding a library corresponding to the new backup data method.
- 1 15. A data backup and storage system, comprising:
- a backup storage system for storing backup data from a client storage system
- 3 under control of a user associated with the client, the backup storage system including
- a server creating a restore engine process as part of a restore session with a
- 5 client, the restore engine communicating with the client via remote procedure calls to
- allow the user to browse restorable objects, mark selected ones of the restorable objects
- 7 for restoration, submit a list of restorable objects marked by the user, and execute
- 8 restoration of the submitted list of restorable objects, wherein the restore execution is
- 9 performed independently of the browse, mark and submit operations such that multiple
- 10 restore submissions can be made prior to execution of the restore.
- 1 16. The system according to claim 15, further including a work item restore process, a
- 2 server restore process, and a client restore process created by the restore engine process to
- 3 form a restore triangle for executing the restore operation.
- 1 17. The system according to claim 15, wherein the restore engine process processes
- 2 libraries upon restore initialization such that libraries can be added to the system for
- 3 supporting new backup methods.
- 1 18. The system according to claim 17, further including a dispatch daemon for
- 2 initiating the restore session.
- 1 19. The system according to claim 15, further including further restore engine
- 2 processes corresponding to further restore sessions initiated by additional clients.



2 executing multiple work item restores concurrently.